

where  $C_i$  is the function describing the in-phase baseband signal and  $C_q$  is the function describing the quadrature baseband signal.

- Compute  $F(s_{code})^*$  where  $F$  is the Fourier transform operator, and  $*$  is the conjugate operator.
- For  $\omega = \omega_{in} - \omega_{offset}$  to  $\omega_{in} + \omega_{offset}$  step  $\frac{\pi}{2T_i}$ 
  - Create a complex mixing signal
$$s_{mix}(t) = \cos(\omega t) + j \sin(\omega t), t = [0 \dots T_i]$$
  - Combine the incident signal  $s(t)$  and the mixing signal  $s_{mix}(t)$ 
$$s_{comb}(t) = s(t)s_{mix}(t)$$
  - Compute the correlation function  $R(\tau) = F^{-1} \{ F(s_{code})^* F(s_{comb}) \}$
  - If  $\max_{\tau} |R(\tau)| > R_{max}$ ,  $R_{max} \leftarrow \max_{\tau} |R(\tau)|$ ,  $R_{store}(\tau) = R(\tau)$
- Next  $\omega$

Please replace paragraph 0106 with the following paragraph:

[0106] Implementations of the present invention exploit the low duty factor of the DTV reference signal in many ways. For example, one implementation employs a time-gated delay-lock loop (DLL) such as that disclosed in J. J. Spilker, Jr., Digital Communications by Satellite, Prentice-Hall, Englewood Cliffs NJ, 1977, Chapter 18-6. Other implementations employ variations of the DLL, including coherent, noncoherent, and quasi-coherent DLLs, such as those disclosed in J. J. Spilker, Jr., Digital Communications by Satellite, Prentice-Hall, Englewood Cliffs NJ, 1977, Chapter 18 and B. Parkinson and J. Spilker, Jr., Global Positioning System-Theory and Applications, AIAA, Washington, DC, 1996, Vol. 1, Chapter 17, Fundamentals of Signal Tracking Theory by J. Spilker, Jr. Other implementations employ various types of matched filters, such as a recirculating matched filter.